

U.S. Serial No. 10/009,415  
"High-Pass Branch of a Frequency Separating Filter for ADSL Systems"  
Response to November 3, 2004 Office Action

**Amendments to the Claims:**

This listing of claims will replace all prior versions, and listings, of claims in the application:

1. (Currently amended) A frequency separating filter having a ~~deep~~low-pass branch for low frequency signals, particularly of analog communication systems, and a high-pass branch for high frequency signals of digital communication systems, with multiple inductive components with magnetic cores, wherein the high-pass branch comprises a pass range above about 20 kHz and further comprises at least one component with a magnetic core made of an amorphous or nanocrystalline alloy.

2. (Previously presented) The frequency separating filter according to claim 1, wherein the alloy has the composition  $\text{Co}_a(\text{Fe}_{1-c}\text{Mn}_c)_b\text{Ni}_d\text{M}_e\text{Si}_x\text{B}_y\text{C}_z$ , with M indicating one or more elements from the group Nb, Mo, Ta, Cr, W, Ge, and P and  $a+b+d+e+x+y+z = 100$ , with

Co:  $a = 40 - 82 \text{ at\%}$ ,

Fe+Mn:  $b = 3 - 10 \text{ at\%}$ ,

Mn/Fe:  $c = 0 - 1$ ,

Ni:  $d = 0 - 30 \text{ at\%}$ ,

M:  $e = 0 - 5 \text{ at\%}$ ,

Si:  $x = 0 - 17 \text{ at\%}$ ,

B:  $y = 8 - 26 \text{ at\%}$ ,

C:  $z = 0 - 3 \text{ at\%}$ ,

$15 < e+x+y+z < 30$ .

3. (Previously presented) The frequency separating filter according to claim 2, wherein the following relationships apply:

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Co:  $a = 50 - 82 \text{ at\%}$ ,

Fe+Mn:  $b = 3 - 10 \text{ at\%}$ ,

Mn/Fe:  $c = 0 - 0.5$ ,

Ni:  $d = 0 - 20 \text{ at\%}$ ,

M:  $e = 0 - 3 \text{ at\%}$ ,

Si:  $x = 1 - 17 \text{ at\%}$ ,

B:  $y = 8 - 20 \text{ at\%}$ ,

C:  $z = 0 - 3 \text{ at\%}$ ,

with  $18 < e+x+y+z < 25$ .

4. (Previously presented) The frequency separating filter according to claim 1, wherein the alloy has the composition  $\text{Fe}_a\text{Cu}_c\text{M}_f\text{Si}_d\text{B}_e$ , with M indicating an element from the group Nb, W, Ta, Zr, Hf, Ti, Mo, or a combination of these and  $a + c + f + d + e = 100\%$ , with

Fe:  $a = 100\% - c - f - d - e$ ,

Cu:  $c = 0.5 - 2 \text{ at\%}$ ,

M:  $f = 1 - 5 \text{ at\%}$ ,

Si:  $d = 6.5 - 18 \text{ at\%}$ ,

B:  $e = 5 - 14 \text{ at\%}$ ,

with  $d + e > 18 \text{ at\%}$ .

5. (Previously presented) The frequency separating filter according to claim 4, wherein the following relationships apply:

Cu:  $c = 0.8 - 1.2 \text{ at\%}$ ,

M:  $f = 2 - 3 \text{ at\%}$ ,

Si:  $d = 14 - 17 \text{ at\%}$ ,

B:  $e = 5 - 14 \text{ at\%}$ ,

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with  $d + e = 22 - 24$  at%.

6. (Previously presented) The frequency separating filter according to claim 1, wherein the alloy has the composition  $\text{Fe}_x\text{Zr}_y\text{Nb}_z\text{B}_v\text{Cu}_w$ , with  $x + y + z + v + w = 100$  at%, with

Fe:  $x = 100 \text{ at\%} - y - z - v - w$ ,

Zr:  $y = 2 - 5 \text{ at\%}$ ,

Nb:  $z = 2 - 5 \text{ at\%}$ ,

B:  $v = 5 - 9 \text{ at\%}$ ,

Cu:  $w = 0.5 - 1.5 \text{ at\%}$ ,

with  $y + z > 5 \text{ at\%}$  and  $y + z + v > 11 \text{ at\%}$ .

7. (Previously presented) The frequency separating filter according to claim 6, wherein the following relationships apply:

Fe:  $x = 83 - 86 \text{ at\%}$ ,

Zr:  $y = 3 - 4 \text{ at\%}$ ,

Nb:  $z = 3 - 4 \text{ at\%}$ ,

B:  $v = 5 - 9 \text{ at\%}$ ,

Cu:  $w = 1 \text{ at\%}$ ,

with  $y + z = 6 - 7 \text{ at\%}$ ,

and  $y + z + v > 12 - 16 \text{ at\%}$ .

8. (Previously presented) The frequency separating filter according to claim 1, wherein the alloy has the composition  $\text{Fe}_x\text{M}_y\text{B}_z\text{Cu}_w$ , with M indicating an element from the group Zr, Hf, Nb and  $x + y + z + w = 100 \text{ at\%}$ , with

Fe:  $x = 100 \text{ at\%} - y - z - w$ ,

M:  $y = 6 - 8 \text{ at\%}$ ,

B:  $z = 3 - 9 \text{ at\%}$ ,

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Cu:  $w = 0 - 1.5 \text{ at\%}$ .

9. (Previously presented) The frequency separating filter according to claim 8, wherein the following relationships apply:

Fe:  $x = 83 - 91 \text{ at\%}$ ,

M:  $y = 7 \text{ at\%}$ ,

B:  $z = 3 - 9 \text{ at\%}$ ,

Cu:  $w = 0 - 1.5 \text{ at\%}$ .

10. (Previously presented) The frequency separating filter according to claim 1, wherein the alloy has the composition  $(\text{Fe}_{0.98}\text{Co}_{0.02})_{90-x}\text{Zr}_7\text{B}_{2+x}\text{Cu}_1$ , with  $x = 0 - 3$ , with the residual alloy component Co able to be replaced by Ni with appropriate equalization.

11. (Previously presented) The frequency separating filter according to claim 10, wherein  $x = 0$ .

12. (Previously presented) The frequency separating filter according to claim 4, wherein the alloy also has an element which is Co or Ni.

13. (Previously presented) The frequency separating filter according to claim 12, wherein the alloy also has  $\text{Co}_b$  with

Co:  $b = 0 - 15 \text{ at\%}$ .

14. (Previously presented) The frequency separating filter according to claim 5, wherein the alloy also has  $\text{Co}_b$  with

Co:  $b = 0 - 0.5 \text{ at\%}$ .